

ABSTRACT

The present invention provides novel mammalian alpha-kinase proteins: melanoma alpha-kinase (MK), heart alpha-kinase (HK), kidney alpha-kinase (KK), skeletal muscle alpha-kinase (SK), and lymphocyte alpha-kinase (LK). In particular, a  
5 novel kinase type is herein provided, characterized by the presence of an alpha-kinase catalytic domain and an ion channel domain. Isolated nucleic acids of the alpha-kinases MK, HK, KK, SK and LK are provided. Methods for making the novel alpha-kinases, cells that express the alpha-kinases and methods for treating an animal in need of either increased or decreased activity of the alpha- kinases are provided.